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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,253

03/29/2004

Hau-Tai Shieh

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7590

12/29/2004

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EXAMINER

NGUYEN, DANG T

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/812,253

Applicant(s)

SHIEH, HAU-TAI

Examiner

Dang T Nguyen

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 30 March 2004.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☒ Other: Search history.

**DETAILED ACTION**

1. This action is responsive to the following communications: the Application and the Information Disclosure Statement filed on March 29, 2004.

2. Claims 1 – 21 are pending in this case. Claims 1, 8, and 16 are independent claims.

*Figures 1-3 are objected to as they should be labeled PRIOR ART.*

**Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

*1-21*  
Claims ~~1-2, 5-10, 14-19, 22-27, and 29-30~~ are rejected under 35 U.S.C. 102(b)

*1-21*  
as being anticipated by Leung, Pub. No.: US 2001/0007538 A1 – Pub. Date: Jul. 12, 2001.

**Regarding independent claim 1**, Figure 1 of Leung discloses a method for refreshing a memory system having a predetermined number of memory blocks [1000 – 1127], comprising:

providing a system refresh signal [RFREQ] for refreshing the memory system, the system refresh signal being used as a first refresh request signal for refreshing a first memory block (page 4 paragraph [0047] lines 7-10); sequentially refreshing one or more subsequent memory blocks of the memory system (page 4 paragraph [0047]), wherein all the memory blocks are refreshed within a retention cycle of the memory system (page 1 paragraph [0004]).

**Regarding dependent claim 2**, Figure 1 of Leung discloses wherein the providing further includes generating the system refresh signal by a refresh timer [102] coupled to the first memory block [DRAM BLOCK 1000].

**Regarding dependent claim 3**, Figure 1 of Leung discloses wherein the sequentially refreshing further includes sequentially generating one or more refresh request signals for the subsequent memory blocks (Page 4, paragraph [0047] lines 20-23).

**Regarding dependent claim 4**, Figure 2 of Leung discloses wherein the sequentially refreshing further includes providing a refresh request signal by a refresh control circuit in each subsequent memory block to its immediately subsequent memory block while it is undergoing a refresh operation (Pages 4 and 5, paragraphs [0053 – 0055]).

**Regarding dependent claim 5**, Leung discloses wherein the sequentially refreshing further includes generating a refresh command based on the refresh request signal for refreshing each memory block (page 2 paragraph [0013]).

**Regarding dependent claim 6**, Leung discloses wherein the refresh commands for the memory blocks do not overlap in timing (paragraph [0004] for disclosing the cycle time for each refresh operation of a DRAM cell to prevent the refresh access from interfering with the external access and the overlap in timing) and (Page 2, paragraph [0013]).

**Regarding dependent claim 7**, Leung discloses wherein the refresh requests do not overlap in timing (Pages 1 and 2, paragraphs [0004 and 0013]).

**Regarding independent claim 8**, Fig.1 of Leung discloses a memory system comprising:

a first memory block coupled to a refresh timer ([102] connects to [DRAM BLOCK 1000]); and one or more subsequent memory blocks without refresh timers contained therein (see Fig. 1, only [BLOCK 1000] coupled to a refresh timer), wherein the refresh timer generates a system refresh signal for refreshing the memory system (Page 2, paragraph [0013]) , and wherein all memory blocks have a refresh controller contained therein which enable sequential refresh of the subsequent memory blocks (Page 2, Paragraphs [0014] and [0011]).

**Regarding dependent claim 9**, Fig. 1 of Leung discloses wherein the refresh controller of the first memory block receives the system refresh signal generated by the refresh timer ([102] and page 4, paragraph [0047]).

**Regarding dependent claim 10**, Leung discloses wherein the refresh controller of each memory block generates a refresh request for an immediately subsequent memory block (Page 2, paragraph [0011]).

**Regarding dependent claim 11**, Fig. 1 of Leung discloses wherein the refresh controller of each memory block generates a refresh request [RFREQ] for an immediately subsequent memory block when the memory block it belongs to is being refreshed (Page 4, paragraph [0047]).

**Regarding dependent claim 12**, Leung discloses wherein the refresh requests generated do not overlap in timing (Pages 1 and 2, paragraphs [0004 and 0013]).

**Regarding dependent claim 13**, Leung discloses wherein the refresh controller of each memory block generates a refresh command for refreshing the memory block it belongs to (Page 2, paragraph [0013]).

**Regarding dependent claim 14**, Leung discloses wherein the refresh commands generated do not overlap in timing (Pages 1 and 2, paragraphs [0004 and 0013]).

**Regarding dependent claim 15**, Fig. 1 of Leung discloses wherein the refresh controller provides a refresh address [101].

**Regarding independent claim 16**, Fig. 1 of Leung discloses a dynamic random access memory system comprising:

a first memory block [1000] coupled to a refresh timer [102]; and one or more subsequent memory blocks without refresh timers contained therein (see Fig. 1, only [BLOCK 1000] coupled to a refresh timer), wherein the refresh timer generates a system refresh signal for refreshing the memory system (page 2, paragraph [0013]), and wherein all memory blocks have a refresh controller contained therein which enable sequential refresh of the subsequent memory blocks (Page 2, Paragraphs [0014] and [0011]).

**Regarding dependent claim 17**, Fig. 1 of Leung discloses wherein the refresh controller of the first memory block receives the system refresh signal generated by the refresh timer ([102] and page 4, paragraph [0047]).

**Regarding dependent claim 18**, Fig. 1 of Leung discloses wherein the refresh controller of each memory block generates a refresh command for refreshing the

memory block it belongs to and a refresh request [RFREQ] for an immediately subsequent memory block when the memory block it belongs to is being refreshed (page 4, paragraph [0047]).

**Regarding dependent claim 19**, Fig. 1 of Leung discloses wherein the refresh requests generated do not overlap in timing (Pages 1 and 2, paragraphs [0004 and 0013]).

**Regarding dependent claim 20**, Fig. 1 of Leung discloses wherein the refresh commands generated do not overlap in timing (Pages 1 and 2, paragraphs [0004 and 0013]).

**Regarding dependent claim 21**, Fig. 1 of Leung discloses wherein the refresh controller provides a refresh address [101].

#### ***Prior art***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lazar et al.	Pub. No.: US 2003/0231540 A1	Pub. Date: Dec. 18, 2003
Lin	Patent No.: 5,596,545	Date of Patent: Jan. 21, 1997
Shore et al.	Pub. No.: US 2004/0184336 A1	Pub. Date: Sep. 23, 2004

#### ***Contact Information***

5. Any inquiry concerning this communication from the examiner should be directed


to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC@uspto.gov](mailto:EBC@uspto.gov).

Dang Nguyen 12/14/2004



**RICHARD ELMS**  
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